CLAIMS

1. An image processing apparatus for converting an interlaced image data to a noninterlaced image data, comprising:

a motion detection portion (3, 51) for comparing pixel data of an interlaced image (pixel data Di(0) and Di(+2F) comprising field screen Pi(0) and Pi(+2F), hereinafter, be described by reference numerals of the field screen to which belonging the pixel data in consideration of correspondence to drawings) to perform a motion detection;

a history value generation portions (52, 53) for generating a history value (Hk) showing the number of times that determination is continuously made to be "a still image" based on a motion detection result (Dif(0)) from the motion detection portion; and

a pixel data interpolation portion (4) for mixing a pixel data (Pm) generated by interpolation in a field and a pixel data (Ps) generated by interpolation between a plurality of fields based on pixel data of the interlaced image at a mixture ratio (Rmix) in accordance with the motion detection result (Dif(0)) and the history value (Hk), wherein the larger the history value (Hk) is, the larger amount of pixel data (Ps) generated by

interpolation between fields the pixel data interpolation portion (4) mixes.

2. An image processing apparatus as set forth in claim 1, wherein said pixel data interpolation portion (4) comprises;

an in-field interpolation portion (41) for generating the pixel data (Pm) by interpolation from a pixel data (Pi(+F)) in a filed;

an inter-field interpolation portion (42) for generating the pixel data (Ps) by interpolation from pixel data (Pi(+F) and Pi(+2F)) in a plurality of filed;

a pixel data mixing portion (43) for mixing the pixel data (Pm) from the in-field interpolation portion (41) and the pixel data (Ps) from the inter-field interpolation portion (42) at a predetermined mixture ratio (Rmix); and

a mixture ratio setting portion (44) for changing the mixture ratio (Rmix) determined by the motion detection result (Dif(0)) of the motion detection portion (3, 51) and the history value (Hk) in such a way that the larger the history value (Hk) is, the higher a ratio of the pixel data (Ps) from the inter-field interpolation portion (42) becomes.

3. An image processing apparatus as set forth in claim 1, wherein said history value generation portions (52,

53) generates a history value (Hk(+2F)) for interpolation of an adjacent pixel in a field delayed by one field from a field where a pixel data to be generated by the interpolation and updates with respect to each interpolation.

4. An image processing apparatus as set forth in claim 1, wherein said history value generation portions (52, 53) generates a history value (Hk(+F)) for an interpolation of an adjacent pixel in a field differing from a field where a pixel data to be generated by the interpolation, generates a history value (Hk(+2F)) for an interpolation of an adjacent pixel in the same field where a pixel data to be generated by the interpolation, and updates respectively with respect to each interpolation.

5. An image processing method of converting an interlaced image data to a noninterlaced image data, comprising the steps of:

motion-detecting by comparing pixel data (Pi(0) and Pi(+2F)) of an interlaced image pixel-by-pixel between frames to perform a motion detection;

generating a history value (Hk) showing the number of times that determination is continuously made to be "a still image" based on a result of the motion detection; and

interpolating by mixing pixel data (Pm) generated by interpolation in a field and pixel data (Ps) generated by interpolation between a plurality of fields based on pixel data of the interlaced image at a mixture ratio (Rmix) in accordance with the motion detection result (Dif(0)) and the history value (Hk), wherein the larger the history value (Hk) is, the larger amount of pixel data (Ps) generated by interpolation between fields mixes.

6. An image processing method as set forth in claim 5, wherein said interpolating step of pixel data further comprises;

in-field interpolating by generating the pixel data (Pm) of a line having no pixel data in a field by interpolation from pixel data (Pi(+F)) in the filed;

inter-field interpolating by generating the pixel data (Ps) by interpolation from pixel data (Pi(+F) and Pi(+2F)) in a plurality of filed;

mixing of pixel data by mixing the pixel data (Pm) generated by the in-field interpolating and the pixel data (Ps) generated by the inter-field interpolation portion (42) at a predetermined mixture ratio (Rmix); and

setting of a mixture ratio by changing the mixture ratio (Rmix) determined by the motion detection result (Dif(0)) of the motion detection and the history value (Hk) in such a way that the larger the history value (Hk)

is, the higher a ratio of the pixel data (Ps) generated by the inter-field interpolatiing becomes.